



ROY COOPER
Governor

MICHAEL S. REGAN
Secretary

LINDA CULPEPPER
Director

October 31, 2019

Mr. John Nichols
Brunswick County
PO Box 249
Bolivia, NC 28422-0249

Subject: Draft NPDES Permit NC0057533
Northwest WTP
Grade I Physical Chemical WPCS
Brunswick County

Dear Mr. Nichols:

The Division has reviewed your request to modify the subject permit. Please review this draft carefully to ensure your thorough understanding of the information, conditions, and requirements it contains.

The draft permit includes the following significant changes from the existing permit:

1. Outfall map has been updated.
2. Receiving stream for outfall 001 has been corrected to state it is an unnamed tributary to Hood Creek on the Permit Cover Sheet and Supplement to Permit Cover Sheet per information provided by the permittee's representative.
3. Language on the Supplement to Permit Cover Sheet has been updated for Outfall 001 and new language has been added to reflect the proposed expansion and addition of the proposed Outfall 002.
4. The facility grade has been added in Section A. (1).
5. Turbidity monitoring has been reduced to 2/Month for outfall 001 in Section A. (1) per the current water treatment plant guidance.
6. Limit for total residual chlorine has been updated for outfall 001 in Section A. (1) based on the waste load allocation at full expansion.
7. Limits for copper have been updated for outfall 001 in Section A. (1) per the reasonable potential analysis.
8. Limits have been removed for fluoride for outfall 001 in Section A. (1) as the reasonable potential analysis indicates there is no longer a potential to exceed water quality standards, and the compliance schedule in the renumbered Section A. (3) has been updated to remove fluoride.
9. Limits have been removed for aluminum and monitoring reduced to quarterly for outfall 001 in Section A. (1) per the current water treatment plant guidance.
10. Monitoring for zinc has been removed for outfall 001 in Section A. (1) per the reasonable potential analysis and as the permittee indicated in the last permit renewal application that zinc orthophosphate or sweetwater CP1236 does not have the potential to be discharged.
11. A limited toxicity test with a compliance schedule has been added in Section A. (1) and language as Section A. (11) for outfall 001 to address ongoing toxicity issues.



12. Sections A. (2) and A. (12) have been added to reflect monitoring requirements for the proposed outfall 002, consisting of a reverse osmosis concentrate waste stream into the Cape Fear River.
13. Compliance schedule in renumbered Section A. (3) has been updated to reflect the current items remaining until the compliance deadline for outfall 001.
14. Section A. (6) has been added to define instream monitoring requirements for the proposed outfall 002.
15. Section A. (7) has been added for monitoring that will be required for outfalls 001 and 002 after discharge commences from the proposed outfall 002.
16. Section A. (8) has been added for required monitoring for PFAS compounds at outfall 002.
17. Section A. (9) has been added to address the disposal of the spent membrane cleaning solution from the reverse osmosis treatment.
18. Language has been updated in renumbered Section A. (13) regarding electronic submission of effluent data. Federal regulations require electronic submittal of all discharge monitoring reports (DMRs).

Attachment A to this letter contains a list of labs that have been pre-approved as capable of analyzing PFAS by LCMSMS Compliant with Table B-15 of QSM 5.1 or Latest Version or with an acceptable variation. Please be aware that criteria are being developed for PFAS compounds and are likely to be lower than the current drinking water health advisory level. The PFAS drinking water health advisory of 70 ng/L is the target concentration for the sum of sample results for PFOA and PFOS. Results for PFAS that do not currently require action may trigger reduction activities in the future.

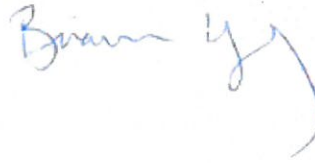
The NC 2007-2014 Water Quality Standard (WQS) Triennial Review was approved by the NC Environmental Management Committee (EMC) on November 13, 2014. The US EPA subsequently approved the WQS revisions on April 6, 2016 with some exceptions. The NC Division of Water Resources NPDES Permitting Unit is required to implement the new dissolved metal standards in all permits public noticed after April 6, 2016.

The new standards for most metals include acute standards. Further, the freshwater standards for several metals are expressed as the dissolved form of the metals, and seven metals have hardness-dependent equations. As a result, the NPDES Permitting Unit will need site-specific effluent hardness data and instream hardness data, upstream of the discharge, for each facility monitoring these metals in order to calculate permit limitations. Effluent hardness and instream hardness sampling, upstream of the discharge, has been added to this permit at a monitoring frequency of quarterly. See Section A.(1.) Effluent Limitations and Monitoring Requirements.

With this notification, the Division will solicit public comment on this draft permit by publishing a notice in newspapers having circulation in the general Brunswick County area, per EPA requirements. **Please provide your comments, if any, to me no later than 30 days after receiving this draft permit.**

Following the 30-day public comment period, the Division will review all pertinent comments and take appropriate action prior to issuing a final permit. If you have questions concerning the draft, please contact me at 919-707-3619, or via e-mail [Brianna.Young@ncdenr.gov].

Sincerely,



Brianna Young
Compliance and Expedited Permitting Unit

cc: NPDES Files
Wilmington Regional Office
Wastewater Operator Certification Group
WSS/Aquatic Toxicology Branch
WSS/Ecosystems Branch
Division of Marine Fisheries
NC Wildlife Resources Commission
U.S. Fish and Wildlife Service
U.S. EPA WIFIA Program
Kelly Boone, CDM Smith
Jonathan Treadway, CDM Smith

Attachment A

Labs approved by NCDEQ-DWR for the PFAS Wastewater Influent Screening Sampling:

(Note: Most labs on this list are also listed on the Department of Defense accredited list approved for PFAS testing using LCMSMS with Isotope Dilution, found by visiting <https://www.denix.osd.mil/edqw/accreditation/accreditedlabs/> and searching by method "PFAS by LCMSMS Compliant with Table B-15 of QSM 5.1 or Latest Version".)

ALS Environmental – Kelso 1317 S. 13 th Avenue Kelso, Washington 98626 (360) 577-7222 http://www.alsglobal.com/	Maxxam Analytics International Corp 6740 Campobello Road Mississauga, Ontario L5N 2L8 (905) 817-5700 http://maxxam.ca
APPL, Inc. 908 N. Temperance Avenue Clovis, CA 93611 (559) 275-2175 http://www.applinc.com/	Microbac Laboratories, Inc. – Ohio Valley Division 158 Starlite Drive Marietta, OH 45750 (800) 373-4071 http://www.microbac.com/ourlaboratories/marietta-ohio/
Alpha Analytical 8 Walkup Drive Westborough, MA 01581 (508) 898-9220 http://www.anab.org/	SGS AXYS Analytical Services Ltd. 2045 Mills Road W. Sidney BC, Canada V8L 5X2 (250) 655-5800 http://www.axysanalytical.com/
Battelle 141 Longwater Drive, Suite 202 Norwell, MA 02061 (781) 681-5565 http://www.battelle.org/	*SGS North America, Inc. – Orlando 4405 Vineland Road, Suite C15 Orlando, FL 32811 (407) 425-6700 http://www.sgs.com/
*Enthalpy Analytical 2714 Exchange Drive Wilmington, NC 28405 (910) 212-5858 https://enthalpy.com/	Shealy Environmental Services 106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 http://www.shealylab.com
Eurofins Lancaster Laboratories Environmental 2425 New Holland Pike Lancaster, PA 17601 (717) 656-2300 http://www.lancasterlabs.com/	TestAmerica – Sacramento 880 Riverside Parkway West Sacramento, CA 95605 (916) 373-5600 http://www.testamericainc.com
GEL Laboratories, LLC 2040 Savage Road Charleston, SC 29407 (843) 556-8171 http://www.gel.com	Vista Analytical Laboratory 1104 Windfield Way El Dorado Hills, CA 95762 (916) 676-1520 http://www.vista-analytical.com
Gulf Coast Analytical Laboratories, Inc. 7979 Innovation Park Drive Baton Rouge, LA 70820 (225) 767-5717 http://www.gcal.com/	

* denotes labs approved by NCDEQ-DWR to run the DoD compliant method regardless of accreditation status and/or are approved to run a variation of the DoD method.

Laboratories that believe they run the DoD compliant method accurately and should be included on this list shall contact Christyn Fertenbaugh via phone at 919-707-3625 or by email at christyn.fertenbaugh@ncdenr.gov.

STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF WATER RESOURCES

PERMIT

TO DISCHARGE WASTEWATER UNDER THE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
(NPDES)

In compliance with the provisions of North Carolina General Statute 143-215.1, other lawful standards and regulations promulgated and adopted by the North Carolina Environmental Management Commission, and the Federal Water Pollution Control Act, as amended,

Brunswick County

is hereby authorized to discharge wastewater from a facility located at the

Northwest Water Treatment Plant (WTP) (Hood Creek WTP)
3954 Clearwell Dr. NE
Leland
Brunswick County

to receiving waters designated as an unnamed tributary to Hood Creek within the Cape Fear River Basin in accordance with effluent limitations, monitoring requirements, and other conditions set forth in Parts I, II, III, and IV hereof.

The permit shall become effective on

This permit and the authorization to discharge shall expire at midnight on **March 31, 2023**.

Signed this day

Linda Culpepper
Director, Division of Water Resources
By Authority of the Environmental Management Commission

SUPPLEMENT TO PERMIT COVER SHEET

All previous NPDES Permits issued to this facility, whether for operation or discharge are hereby revoked, and as of this issuance, any previously issued permit bearing this number is no longer effective. Therefore, the exclusive authority to operate and discharge from this facility arises under the permit conditions, requirements, terms, and provisions described herein.

Brunswick County

is hereby authorized to:

1. Continue to operate a conventional water treatment plant with discharge of wastewaters at Outfall 001 from media filter backwash and sedimentation basins. No reverse osmosis concentrate may be discharged from Outfall 001. This water treatment plant currently has a design potable flowrate of 24 MGD and a maximum, monthly average wastewater discharge of approximately 1.49 MGD. This facility is located at the Northwest WTP (Hood Creek WTP), 3954 Clearwell Dr. NE in Leland in Brunswick County. Water and wastewater treatment consists of:
 - Influent disinfection [chlorination]
 - Two (2) 12 MGD up-flow clarifiers [disinfected raw water]
 - Two (2) banks of four (4) filters each [sand/anthracite/gravel filter]
 - One (1) 4 MGD clear well
 - One (1) 2 MGD surge lagoon
 - One (1) 0.180 MGD sludge thickener
 - Dechlorination
 - Chemical usage consists of:
 - Chlorine dioxide
 - 50% sodium hydroxide
 - Polyaluminum chloride
 - Sodium silica fluoride
 - Bleach-type solutions
 - Cationic polymer solutions
 - Calcium thiophosphate
 - Powered activated carbon
 - Orthophosphate
2. Upon completion of expansion of potable capacity up to 36 MGD, and 60 days prior to commencement of discharge from Outfall 001 from media filter backwash and sedimentation basins, the Wilmington Regional Office staff and Central Office staff must be contacted. No reverse osmosis concentrate may be discharged from Outfall 001.
3. Upon completion of expansion of potable capacity up to 36 MGD, and 60 days prior to commencement of discharge from Outfall 002 of reject concentrate wastewater from reverse osmosis units, the Wilmington Regional Office staff and Central Office staff must be contacted.

4. Upon completion of expansion of potable capacity up to 45 MGD, and 60 days prior to commencement of discharge from Outfall 001 from media filter backwash and sedimentation basins, the Wilmington Regional Office staff and Central Office staff must be contacted. No reverse osmosis concentrate may be discharged from Outfall 001.
5. Upon completion of expansion of potable capacity up to 45 MGD, and 60 days prior to commencement of discharge from Outfall 002 of reject concentrate wastewater from reverse osmosis units, the Wilmington Regional Office staff and Central Office staff must be contacted.
6. This water treatment plant, upon expansion at full build-out, will have a design potable flowrate of 45 MGD and an estimated wastewater discharge of 3.9 MGD from Outfall 001 from media filter backwash and sedimentation basins and a maximum design wastewater discharge of 5 MGD from Outfall 002 of reject concentrate wastewater from reverse osmosis units. No reverse osmosis concentrate may be discharged from Outfall 001. This facility will be located at the Northwest WTP (Hood Creek WTP), 3954 Clearwell Dr. NE in Leland in Brunswick County. Water and wastewater treatment will consist of:

- Two (2) 24 MGD rapid mix basins
- Four (4) high rate clarifier basins
- Sixteen (16) dual media (sand and anthracite) granular media filters
- Two (2) clearwells
- One (1) 4 MGD backwash equalization and decant basin
- Two (2) 80-ft diameter sludge thickeners
- Dechlorination
- Eight (8) 5.15 MGD reverse osmosis skids
- Surface water discharge (Outfall 001)
- Submerged streambank discharge (Outfall 002)
- Conventional treatment chemical usage consists of:
 - Chlorine dioxide
 - Chlorine
 - Powdered activated carbon (PAC)
 - Polyaluminum chloride (PAX)
 - Caustic soda
 - Coagulant aid polymer
 - Sodium fluorosilicate
 - Orthophosphate
 - Chloramines (chlorine plus ammonia)
 - Calcium thiosulfate
- Reverse osmosis treatment chemical usage consists of:
 - Sodium bisulfite
 - Antiscalant
 - Carbon dioxide
 - Emulsified lime
 - Alkaline or acid solution (for membrane cleaning) - Spent membrane cleaning solutions shall be treated and mixed with the membrane reject concentrate for discharge from Outfall 002 or treated and disposed off-site.

7. Discharge from said treatment works at the location specified on the attached map to Outfall 001 into an unnamed tributary to Hood Creek [Stream Segment: 18-66], a waterbody currently classified C; Sw within subbasin 03-06-17 [HUC: 0303000504] of the Cape Fear River Basin.
8. Discharge from said treatment works at the location specified on the attached map to Outfall 002 in the Cape Fear River [Stream Segment: 18-(63)], a waterbody currently classified C; Sw, PNA within subbasin 03-06-17 [HUC: 0303000504] of the Cape Fear River Basin.

DRAFT

PART I.

A. (1) EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS - OUTFALL 001

[15A NCAC 02B .0400 et seq., 02B .0500 et seq.]

Grade I Physical Chemical WPCS [15A NCAC 08G .0302]

During the period beginning on the effective date of this permit and lasting until expiration, the Permittee is authorized to discharge filter backwash from Outfall 001. Such discharges shall be limited, monitored and reported¹ by the Permittee as specified below:

EFFLUENT CHARACTERISTICS <i>Parameter Code</i>	LIMITS		MONITORING REQUIREMENTS		
	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type	Sample Location
Flow (MGD) 50050			Continuous	Recording	Effluent
Total Suspended Solids C0530	30 mg/l	45 mg/l	Weekly	Grab	Effluent
pH 00400	Not < 6.0 s.u. nor > 9.0 s.u.		Weekly	Grab	Effluent
Total Residual Chlorine ² 50060		17 µg/l	Weekly	Grab	Effluent
Turbidity (NTU) 00070			2/Month	Grab	Effluent
Total Aluminum (µg/l) 01105			Quarterly	Grab	Effluent
Total Copper ³ 01042	8.12 µg/l	10.74 µg/l	Monthly	Grab	Effluent
Total Fluoride (µg/l) 00951			Monthly	Grab	Effluent
Total Nitrogen (TN) (mg/l) C0600	Monitor & Report		Quarterly	Grab	Effluent
Total Phosphorus (TP) (mg/l) C0665	Monitor & Report		Quarterly	Grab	Effluent
Hardness - Total as [CaCO ₃ or (Ca + Mg)] (mg/L) ⁴ 00900	Monitor & Report		Quarterly	Grab	Effluent
Hardness - Total as [CaCO ₃ or (Ca + Mg)] (mg/L) ⁵ 00900	Monitor & Report		Quarterly	Grab	Upstream
Chronic WET Testing ⁶ TGP3B	See Footnote 6		Quarterly	Grab	Effluent

Footnotes:

1. The permittee shall submit discharge monitoring reports electronically using the NC DWR's eDMR application system [see Section A. (13)].
2. The Division shall consider all effluent TRC values reported below 50 µg/L to be in compliance with the permit. However, the Permittee shall continue to record and submit all values reported by a North Carolina certified test laboratory (including field certified), even if these values fall below 50 µg/L.
3. Compliance with this limit shall commence on April 1, 2022. See Compliance Schedule in Section A. (3).
4. Effluent hardness sampling should be performed in conjunction with sampling for hardness dependent metals (copper).
5. The Permittee shall sample instream hardness, upstream of the facility's discharge. The sample shall be representative of the hardness in the receiving stream.
6. Until September 30, 2021, Chronic WET testing (*Ceriodaphnia dubia*) monitoring only at **90%** in **February, May, August and November** [See Section A. (10)]. Beginning October 1, 2021, Chronic WET testing (*Ceriodaphnia dubia*) Pass/Fail limit at **90%** in **February, May, August and November** [See Section A. (11)].

All samples must be collected from a typical discharge event.

The Permittee shall discharge no floating solids or foam.

A. (2) EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS - OUTFALL 002
 [15A NCAC 02B .0400 et seq., 02B .0500 et seq.]

Upon completion of reverse osmosis treatment units, and lasting until permit expiration, the Permittee is authorized to discharge filter backwash from Outfall 002. Such discharges shall be limited, monitored and reported¹ by the Permittee as specified below:

EFFLUENT CHARACTERISTICS <i>Parameter Code</i>	LIMITS		MONITORING REQUIREMENTS		
	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type	Sample Location ²
Flow (MGD) 50050			Continuous	Recording	Effluent
Dissolved Oxygen (mg/L) 00300			2/Month	Grab	Effluent U & D
Salinity (ppth) 00480			2/Month	Grab	Effluent U & D
Conductivity (µmhos/cm) 00480			2/Month	Grab	Effluent U & D
pH 00400	Not < 6.0 s.u. nor > 9.0 s.u.		Weekly	Grab	Effluent
pH (s.u.) 00400			2/Month	Grab	U & D
Total Residual Chlorine ³ 50060		28 µg/l	Weekly	Grab	Effluent
Total Dissolved Solids (mg/L) 70295			2/Month	Grab	Effluent
Turbidity (NTU) 00070			2/Month	Grab	Effluent
Total Arsenic (µg/L) 01002			Monthly	Grab	Effluent
Total Chloride 00940	345 mg/L		Monthly	Grab	Effluent
Total Copper (µg/L) 01042			Monthly	Grab	Effluent
Total Fluoride 00951	2,700 µg/L		Monthly	Grab	Effluent
Total Zinc (µg/L) 01092			Monthly	Grab	Effluent
Ammonia Nitrogen (mg/L) CO610			Monthly	Grab	Effluent
Perchlorate 61209	4.2 µg/L		Monthly	Grab	Effluent
Total Lead 01051			Quarterly	Grab	Effluent
Dichloroacetic acid 51605			Quarterly	Grab	Effluent
Total Nitrogen (TN) (mg/L) CO600			Quarterly	Grab	Effluent
Total Phosphorus (TP) (mg/L) CO665			Quarterly	Grab	Effluent
Hardness - Total as [CaCO ₃ or (Ca + Mg)] (mg/L) ⁴ 00900	Monitor & Report		Quarterly	Grab	Effluent
Hardness - Total as [CaCO ₃ or (Ca + Mg)] (mg/L) ⁵ 00900	Monitor & Report		Quarterly	Grab	Upstream
Chronic WET Testing ⁶ TGP3B	Pass / Fail		Quarterly	Grab	Effluent
PFAS Compounds	See Footnote 7		Semi-Annual	Grab	Effluent

Footnotes:

1. The permittee shall submit discharge monitoring reports electronically using the NC DWR's eDMR application system [see Section A. (13)].
2. U = Upstream; D = Downstream. See Section A. (6) for instream monitoring requirements.
3. The Division shall consider all effluent TRC values reported below 50 µg/L to be in compliance with the permit. However, the Permittee shall continue to record and submit all values reported by a North Carolina certified test laboratory (including field certified), even if these values fall below 50 µg/L.
4. Effluent hardness sampling should be performed in conjunction with testing for hardness dependent metals (copper, zinc).
5. The Permittee shall sample instream hardness, upstream of the facility's discharge. The sample shall be representative of the hardness in the receiving stream. If the Permittee is a member of the Monitoring Coalition Program, sampling for instream hardness may be waived as long as the Monitoring coalition agrees to sample hardness at the nearest upstream location, at a minimum frequency of quarterly, and the Permittee has obtained approval from DWR-NPDES Permitting Unit that the upstream station being monitored by the Coalition is representative of the receiving stream for this discharge. The Permittee is responsible for submitting instream hardness test results with its permit renewal application package. If Coalition membership is cancelled or the Coalition terminates instream hardness sampling at the approved station, the Permittee will immediately notify the Division and resume sampling for instream hardness, upstream of its discharge.
6. Chronic WET testing (*Ceriodaphnia dubia*) limit test at **33.3%** in **February, May, August and November**. See Section A. (12).
7. See Section A. (8) for monitoring requirements.

All samples must be collected from a typical discharge event.

The Permittee shall discharge no floating solids or foam.

A. (3) SCHEDULE OF COMPLIANCE - OUTFALL 001

[G.S. 143-215.1(b)]

1. Within one year from the effective day of the permit the Permittee shall submit to the Division of Water Resources a Corrective Action Plan summarizing the actions to be taken to achieve compliance with the Total Copper limits at Outfall 001 and a schedule of activities to implement the Plan.
2. Within two years from the effective date of the permit submit a report to the Division summarizing actions taken in accordance with the Corrective Action Plan.
3. Within three years from the effective date of the permit submit a report to the Division summarizing actions taken in accordance with the Corrective Action Plan.
5. Achieve compliance with Total Copper limits specified in Section A. (1) by April 1, 2022.

Upon approval of the Corrective Action Plan by the Division, the report and actions become an enforceable part of this permit. Any modifications to the schedule shall be requested to the Division at least ninety (90) days before the deadline. Modifications to the schedule in excess of four months will be subject to public notice.

The Corrective Action Plan and reports shall include the owner's name, NPDES permit number and Permittee contact person, and shall be submitted to:

(1) NCDEQ / Division of Water Resources
NPDES Compliance and Expedited Permitting
1617 Mail Service Center
Raleigh, NC 27699-1617

(2) NCDEQ / Division of Water Resources
Wilmington Regional Office
127 Cardinal Drive Ext.
Wilmington, NC 28405

A. (4) PERMIT RE-OPENER: WHOLE EFFLUENT TOXICITY

[G.S. 143-215.1(b)]

Whole Effluent Toxicity monitoring results indicating aquatic toxicity may result in the Division of Water Resources re-opening this permit, or requesting by letter that further action be taken. Additional metals testing, a toxicity identification evaluation, a toxicity reduction evaluation, and/or an assessment of discharge treatment alternatives may be requested.

A. (5) PERMIT RE-OPENER: TMDL IMPLEMENTATION

[G.S. 143-215.1(b)]

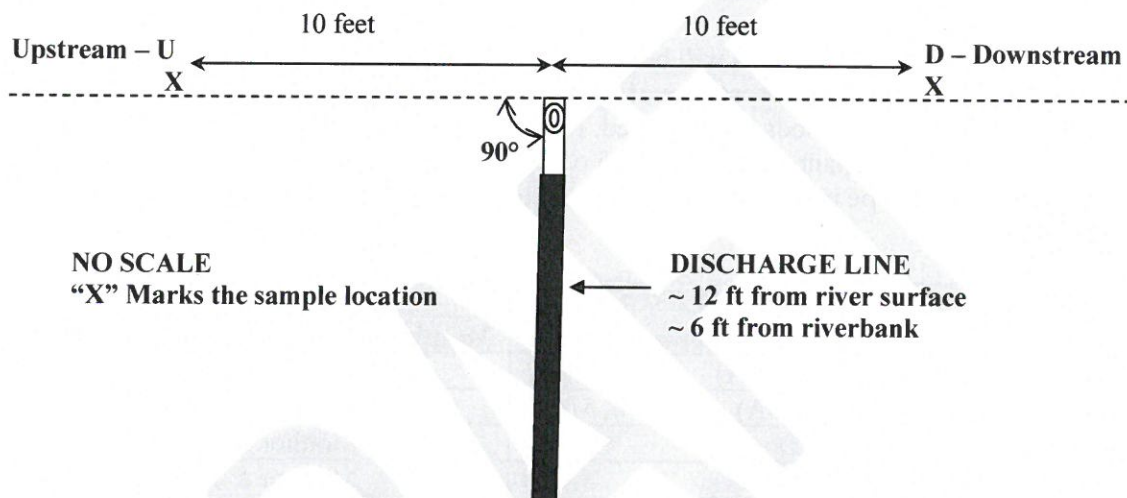
The Division may, upon written notification to the Permittee, re-open this permit in order to incorporate or modify effluent limits, monitoring and reporting requirements, and other permit conditions when it deems such action is necessary to implement TMDL(s) approved by the USEPA.

A. (6) INSTREAM SAMPLE LOCATIONS

The Permittee shall collect grab samples at the designated locations and frequency during a continuous discharge event after a minimum of 1 hour of continuous discharge has occurred. Effort should be made

to collect the sample several feet below the surface water level or at the median water depth of the river at the point at which the sample is being taken. Every effort should be made to replicate the same sample location and depth each time instream samples are taken. To provide a point of comparison the required effluent grab sample should be collected at the same time.

In accordance with 15A NCAC 2B .0505(c)(4), stream sampling may be discontinued when flow conditions or extreme weather conditions could result in injury or death of the person(s) collecting the samples. In such cases, on each day that sampling is discontinued, written justification for the discontinuance shall be specified in the monitoring report for the month in which the event occurred. This provision also applies to influent and effluent sampling.



Location Description:

U = upstream 10 feet, perpendicular to diffuser, approximately 12 feet from river surface and 6 feet from riverbank.

D = downstream 10 feet, perpendicular to diffuser, approximately 12 feet from river surface and 6 feet from riverbank.

A. (7) REPORTING REQUIREMENTS AFTER COMMENCEMENT OF DISCHARGE

In accordance with 40 CFR 122.21(k)(5)(vi), no later than 2 years after the commencement of discharge from the proposed facility through outfall 001 and outfall 002, the applicant is required to complete and submit items V and VI of NPDES application Form 2C for outfall 001 and outfall 002. Please note that all data generated must be reported to the approved detection level or lower reporting level of the procedure. Practical Quantitation Limit levels can be found on the DWR website at:

<https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/microbiology-inorganics-branch/methods-pqls-qa>. Two copies of items V and VI of NPDES application Form 2C shall be submitted to:

Attention: North Carolina Division of Water Resources
Wastewater Branch / NPDES
1617 Mail Service Center
Raleigh, North Carolina 27699-1621

In addition, no later than 2 years after the commencement of discharge from the proposed facility through outfall 002, monitoring shall be performed and reported for all parameters listed in Attachment I of this permit for outfall 002. See Attachment I for required monitoring.

A. (8) REPORTING REQUIREMENTS FOR EMERGING COMPOUNDS - OUTFALL 002

Monitoring for emerging compounds will be required for Outfall 002 at a semi-annual frequency. Samples collected should be representative of the typical wastewater discharged from the facility. Sufficiently sensitive test methods shall be used. All data shall be reported in the units of ng/L. The PFAS by LCMSMS Compliant with Table B-15 of QSM 5.1 or Latest Version or with an acceptable variation method should be used. Grab samples are required to avoid cross-contamination and ensure consistency.

EFFLUENT CHARACTERISTICS		LIMITS	
	<i>Parameter Code</i>	Monthly Average	Daily Maximum
Perfluorotetradecanoic acid (PFTeA)	51631	Monitor & Report	
Perfluorotridecanoic acid (PFTriA)	51630	Monitor & Report	
Perfluorododecanoic acid (PFDoA)	51629	Monitor & Report	
Perfluoroundecanoic acid (PFUnA)	51628	Monitor & Report	
Perfluorodecanoic acid (PFDA)	51627	Monitor & Report	
Perfluorononanoic acid (PFNA)	51626	Monitor & Report	
Perfluorooctanoic acid (PFOA)	51521	Monitor & Report	
Perfluoroheptanoic acid (PFHpA)	51625	Monitor & Report	
Perfluorohexanoic acid (PFHxA)	51624	Monitor & Report	
Perfluoropentanoic acid (PFPeA)	51623	Monitor & Report	
Perfluorobutanoic acid (PFBA)	51522	Monitor & Report	
Perfluorodecanesulfonic acid (PFDS)		Monitor & Report	
Perfluorononanesulfonic acid (PFNS)		Monitor & Report	
Perfluorooctanesulfonic acid (PFOS)		Monitor & Report	
Perfluoroheptanesulfonic acid (PFHpS)		Monitor & Report	
Perfluorohexanesulfonic acid (PFHxS)		Monitor & Report	
Perfluoropentanesulfonic acid (PFPeS)		Monitor & Report	
Perfluorobutanesulfonic acid (PFBS)		Monitor & Report	
Perfluorooctanesulfonamide (PFOSA)	51525	Monitor & Report	
2-(N-ethylperfluorooctanesulfonamido) acetic acid (N-EtFOSAA)	51643	Monitor & Report	
2-(N-methylperfluorooctanesulfonamido) acetic acid (N-MeFOSAA)	51644	Monitor & Report	
2,3,3,3-Tetrafluoro-2 (1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid (HFPO-DA / PFPrOPrA / GenX)		Monitor & Report	

Perfluoro-2-methoxyacetic acid (PFMOAA)	Monitor & Report
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	Monitor & Report
Nafion Byproduct 2	Monitor & Report
Perfluoro(3,5,7,9-tetraoxadecanoic) acid	Monitor & Report
Perfluoro(3,5,7-trioxaoctanoic) acid	Monitor & Report
Perfluoro(3,5-dioxahexanoic) acid	Monitor & Report

A. (9) DISPOSAL OF SPENT MEMBRANE CLEANING SOLUTIONS

Spent membrane cleaning solutions shall be treated and mixed with the membrane reject concentrate at a rate which will not affect the aquatic toxicity of the effluent in the receiving waters. When use of detergents is used with the membrane cleaning solutions, spent membrane cleaning solutions shall be treated and disposed off-site, and discharge of the solutions to surface waters is not authorized under this permit.

A. (10) CHRONIC TOXICITY PASS/FAIL MONITORING (QUARTERLY) OUTFALL 001

[15A NCAC 02B .0500 et seq.]

The permittee shall conduct **quarterly** chronic toxicity tests using test procedures outlined in the "North Carolina *Ceriodaphnia* Chronic Effluent Bioassay Procedure," (Revised December 2010, or subsequent versions).

The effluent concentration defined as treatment two in the procedure document is **90** %. The testing shall be performed as a *Ceriodaphnia dubia* 7-day pass/fail test. The tests will be performed **during the months of February, May, August and November**. These months signify the first month of each three-month toxicity testing quarter assigned to the facility. Effluent sampling for this testing must be obtained during representative effluent discharge and shall be performed at the NPDES permitted final effluent discharge below all treatment processes.

All toxicity testing results required as part of this permit condition will be entered on the Effluent Discharge Monitoring Form (**MR-1**) for the month in which it was performed, using the parameter code **TGP3B**. Additionally, DWR Form **AT-1** (original) is to be sent to the following address:

North Carolina Division of Water Resources
Water Sciences Section/Aquatic Toxicology Branch
1621 Mail Service Center
Raleigh, NC 27699-1621

Or, results can be sent to the email, ATForms.ATB@ncdenr.gov.

Completed Aquatic Toxicity Test Forms shall be filed with the Water Sciences Section no later than 30 days after the end of the reporting period for which the report is made.

Test data shall be complete and accurate and include all supporting chemical/physical measurements performed in association with the toxicity tests, as well as all dose/response data. Total residual chlorine of the effluent toxicity sample must be measured and reported if chlorine is employed for disinfection of the waste stream.

Should there be no discharge of flow from the facility during a month in which toxicity monitoring is required, the permittee will complete the information located at the top of the aquatic toxicity (AT) test form indicating the facility name, permit number, pipe number, county, and the month/year of the report with the notation of "No Flow" in the comment area of the form. The report shall be submitted to the Water Sciences Section at the address cited above.

Should the permittee fail to monitor during a month in which toxicity monitoring is required, then monthly monitoring will begin immediately. Upon submission of a valid test, this monthly test requirement will revert to quarterly in the months specified above.

Should any test data from this monitoring requirement or tests performed by the North Carolina Division of Water Resources indicate potential impacts to the receiving stream, this permit may be re-opened and modified to include alternate monitoring requirements or limits.

NOTE: Failure to achieve test conditions as specified in the cited document, such as minimum control organism survival, minimum control organism reproduction, and appropriate environmental controls, shall constitute an **invalid test** and will require immediate follow-up testing to be completed no later than the last day of the month following the month of the initial monitoring.

A. (11) CHRONIC TOXICITY PERMIT LIMIT (QUARTERLY)
OUTFALL 001
 [15A NCAC 02B .0200 et seq.]

The effluent discharge shall at no time exhibit observable inhibition of reproduction or significant mortality to *Ceriodaphnia dubia* at an effluent concentration of 90 %.

The permit holder shall perform at a minimum, **quarterly** monitoring using test procedures outlined in the "North Carolina *Ceriodaphnia* Chronic Effluent Bioassay Procedure," (Revised December 2010, or subsequent versions) or "North Carolina Phase II Chronic Whole Effluent Toxicity Test Procedure" (Revised December 2010, or subsequent versions). The tests will be performed **during the months of February, May, August, and November**. These months signify the first month of each three-month toxicity testing quarter assigned to the facility. Effluent sampling for this testing must be obtained during representative effluent discharge and shall be performed at the NPDES permitted final effluent discharge below all treatment processes.

If the test procedure performed as the first test of any single quarter results in a failure or ChV below the permit limit, then multiple-concentration testing shall be performed at a minimum, in each of the two following months as described in "North Carolina Phase II Chronic Whole Effluent Toxicity Test Procedure" (Revised-December 2010, or subsequent versions).

All toxicity testing results required as part of this permit condition will be entered on the Effluent Discharge Monitoring Form (MR-1) for the months in which tests were performed, using the parameter

code **TGP3B** for the pass/fail results and **THP3B** for the Chronic Value. Additionally, DWR Form **AT-3** (original) is to be sent to the following address:

North Carolina Division of Water Resources
Water Sciences Section/Aquatic Toxicology Branch
1621 Mail Service Center
Raleigh, NC 27699-1621

Or, results can be sent to the email, ATForms.ATB@ncdenr.gov.

Completed Aquatic Toxicity Test Forms shall be filed with the Water Sciences Section no later than 30 days after the end of the reporting period for which the report is made.

Test data shall be complete, accurate, include all supporting chemical/physical measurements and all concentration/response data, and be certified by laboratory supervisor and ORC or approved designate signature. Total residual chlorine of the effluent toxicity sample must be measured and reported if chlorine is employed for disinfection of the waste stream.

Should there be no discharge of flow from the facility during a month in which toxicity monitoring is required, the permittee will complete the information located at the top of the aquatic toxicity (AT) test form indicating the facility name, permit number, pipe number, county, and the month/year of the report with the notation of "No Flow" in the comment area of the form. The report shall be submitted to the Water Sciences Section at the address cited above.

Should the permittee fail to monitor during a month in which toxicity monitoring is required, monitoring will be required during the following month. Assessment of toxicity compliance is based on the toxicity testing quarter, which is the three-month time interval that begins on the first day of the month in which toxicity testing is required by this permit and continues until the final day of the third month.

Should any test data from this monitoring requirement or tests performed by the North Carolina Division of Water Resources indicate potential impacts to the receiving stream, this permit may be re-opened and modified to include alternate monitoring requirements or limits.

NOTE: Failure to achieve test conditions as specified in the cited document, such as minimum control organism survival, minimum control organism reproduction, and appropriate environmental controls, shall constitute an **invalid test** and will require immediate follow-up testing to be completed no later than the last day of the month following the month of the initial monitoring.

**A. (12) CHRONIC TOXICITY PERMIT LIMIT (QUARTERLY)
OUTFALL 002**

[15A NCAC 02B .0200 et seq.]

The effluent discharge shall at no time exhibit observable inhibition of reproduction or significant mortality to *Ceriodaphnia dubia* at an effluent concentration of 33.3 %.

The permit holder shall perform at a minimum, **quarterly** monitoring using test procedures outlined in the "North Carolina *Ceriodaphnia* Chronic Effluent Bioassay Procedure," (Revised December 2010, or

subsequent versions) or "North Carolina Phase II Chronic Whole Effluent Toxicity Test Procedure" (Revised December 2010, or subsequent versions). The tests will be performed **during the months of February, May, August, and November**. These months signify the first month of each three-month toxicity testing quarter assigned to the facility. Effluent sampling for this testing must be obtained during representative effluent discharge and shall be performed at the NPDES permitted final effluent discharge below all treatment processes.

If the test procedure performed as the first test of any single quarter results in a failure or ChV below the permit limit, then multiple-concentration testing shall be performed at a minimum, in each of the two following months as described in "North Carolina Phase II Chronic Whole Effluent Toxicity Test Procedure" (Revised-December 2010, or subsequent versions).

All toxicity testing results required as part of this permit condition will be entered on the Effluent Discharge Monitoring Form (MR-1) for the months in which tests were performed, using the parameter code **TGP3B** for the pass/fail results and **THP3B** for the Chronic Value. Additionally, DWR Form **AT-3** (original) is to be sent to the following address:

North Carolina Division of Water Resources
Water Sciences Section/Aquatic Toxicology Branch
1621 Mail Service Center
Raleigh, NC 27699-1621

Or, results can be sent to the email, ATForms.ATB@ncdenr.gov.

Completed Aquatic Toxicity Test Forms shall be filed with the Water Sciences Section no later than 30 days after the end of the reporting period for which the report is made.

Test data shall be complete, accurate, include all supporting chemical/physical measurements and all concentration/response data, and be certified by laboratory supervisor and ORC or approved designate signature. Total residual chlorine of the effluent toxicity sample must be measured and reported if chlorine is employed for disinfection of the waste stream.

Should there be no discharge of flow from the facility during a month in which toxicity monitoring is required, the permittee will complete the information located at the top of the aquatic toxicity (AT) test form indicating the facility name, permit number, pipe number, county, and the month/year of the report with the notation of "No Flow" in the comment area of the form. The report shall be submitted to the Water Sciences Section at the address cited above.

Should the permittee fail to monitor during a month in which toxicity monitoring is required, monitoring will be required during the following month. Assessment of toxicity compliance is based on the toxicity testing quarter, which is the three-month time interval that begins on the first day of the month in which toxicity testing is required by this permit and continues until the final day of the third month.

Should any test data from this monitoring requirement or tests performed by the North Carolina Division of Water Resources indicate potential impacts to the receiving stream, this permit may be re-opened and modified to include alternate monitoring requirements or limits.

NOTE: Failure to achieve test conditions as specified in the cited document, such as minimum control organism survival, minimum control organism reproduction, and appropriate environmental controls, shall constitute an **invalid test** and will require immediate follow-up testing to be completed no later than the last day of the month following the month of the initial monitoring.

A. (13) ELECTRONIC REPORTING - DISCHARGE MONITORING REPORTS

[G.S. 143-215.1 (b)]

Federal regulations require electronic submittal of all discharge monitoring reports (DMRs) and program reports. The final NPDES Electronic Reporting Rule was adopted and became effective on December 21, 2015.

NOTE: This special condition supplements or supersedes the following sections within Part II of this permit (*Standard Conditions for NPDES Permits*):

- Section B. (11.) Signatory Requirements
- Section D. (2.) Reporting
- Section D. (6.) Records Retention
- Section E. (5.) Monitoring Reports

1. Reporting Requirements [Supersedes Section D. (2.) and Section E. (5.) (a)]

The permittee shall report discharge monitoring data electronically using the NC DWR's Electronic Discharge Monitoring Report (eDMR) internet application.

Monitoring results obtained during the previous month(s) shall be summarized for each month and submitted electronically using eDMR. The eDMR system allows permitted facilities to enter monitoring data and submit DMRs electronically using the internet. The eDMR system may be accessed at: <https://deq.nc.gov/about/divisions/water-resources/edmr>.

If a permittee is unable to use the eDMR system due to a demonstrated hardship or due to the facility being physically located in an area where less than 10 percent of the households have broadband access, then a temporary waiver from the NPDES electronic reporting requirements may be granted and discharge monitoring data may be submitted on paper DMR forms (MR 1, 1.1, 2, 3) or alternative forms approved by the Director. Duplicate signed copies shall be submitted to the following address:

NC DEQ / Division of Water Resources / Water Quality Permitting Section
ATTENTION: Central Files
1617 Mail Service Center
Raleigh, North Carolina 27699-1617

See "How to Request a Waiver from Electronic Reporting" section below.

Regardless of the submission method, the first DMR is due on the last day of the month following the issuance of the permit or in the case of a new facility, on the last day of the month following the commencement of discharge.

Starting on **December 21, 2020**, the permittee must electronically report the following compliance monitoring data and reports, when applicable:

- Sewer Overflow/Bypass Event Reports;
- Pretreatment Program Annual Reports; and
- Clean Water Act (CWA) Section 316(b) Annual Reports.

The permittee may seek an electronic reporting waiver from the Division (see “How to Request a Waiver from Electronic Reporting” section below).

2. Electronic Submissions

In accordance with 40 CFR 122.41(l)(9), the permittee must identify the initial recipient at the time of each electronic submission. The permittee should use the EPA’s website resources to identify the initial recipient for the electronic submission.

Initial recipient of electronic NPDES information from NPDES-regulated facilities means the entity (EPA or the state authorized by EPA to implement the NPDES program) that is the designated entity for receiving electronic NPDES data [see 40 CFR 127.2(b)].

EPA plans to establish a website that will also link to the appropriate electronic reporting tool for each type of electronic submission and for each state. Instructions on how to access and use the appropriate electronic reporting tool will be available as well. Information on EPA’s NPDES Electronic Reporting Rule is found at: <https://www.federalregister.gov/documents/2015/10/22/2015-24954/national-pollutant-discharge-elimination-system-npdes-electronic-reporting-rule>

Electronic submissions must start by the dates listed in the “Reporting Requirements” section above.

3. How to Request a Waiver from Electronic Reporting

The permittee may seek a temporary electronic reporting waiver from the Division. To obtain an electronic reporting waiver, a permittee must first submit an electronic reporting waiver request to the Division. Requests for temporary electronic reporting waivers must be submitted in writing to the Division for written approval at least sixty (60) days prior to the date the facility would be required under this permit to begin submitting monitoring data and reports. The duration of a temporary waiver shall not exceed 5 years and shall thereupon expire. At such time, monitoring data and reports shall be submitted electronically to the Division unless the permittee re-applies for and is granted a new temporary electronic reporting waiver by the Division. Approved electronic reporting waivers are not transferrable. Only permittees with an approved reporting waiver request may submit monitoring data and reports on paper to the Division for the period that the approved reporting waiver request is effective.

Information on eDMR and the application for a temporary electronic reporting waiver are found on the following web page:

<http://deq.nc.gov/about/divisions/water-resources/edmr>

4. Signatory Requirements [Supplements Section B. (11.) (b) and Supersedes Section B. (11.) (d)]

All eDMRs submitted to the permit issuing authority shall be signed by a person described in Part II, Section B. (11.) (a) or by a duly authorized representative of that person as described in Part II, Section B. (11.) (b). A person, and not a position, must be delegated signatory authority for eDMR reporting purposes.

For eDMR submissions, the person signing and submitting the DMR must obtain an eDMR user account and login credentials to access the eDMR system. For more information on North Carolina's eDMR system, registering for eDMR and obtaining an eDMR user account, please visit the following web page:

<http://deq.nc.gov/about/divisions/water-resources/edmr>

Certification. Any person submitting an electronic DMR using the state's eDMR system shall make the following certification [40 CFR 122.22]. NO OTHER STATEMENTS OF CERTIFICATION WILL BE ACCEPTED:

"I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations."

5. Records Retention [Supplements Section D. (6.)]

The permittee shall retain records of all Discharge Monitoring Reports, including eDMR submissions. These records or copies shall be maintained for a period of at least 3 years from the date of the report. This period may be extended by request of the Director at any time [40 CFR 122.41].

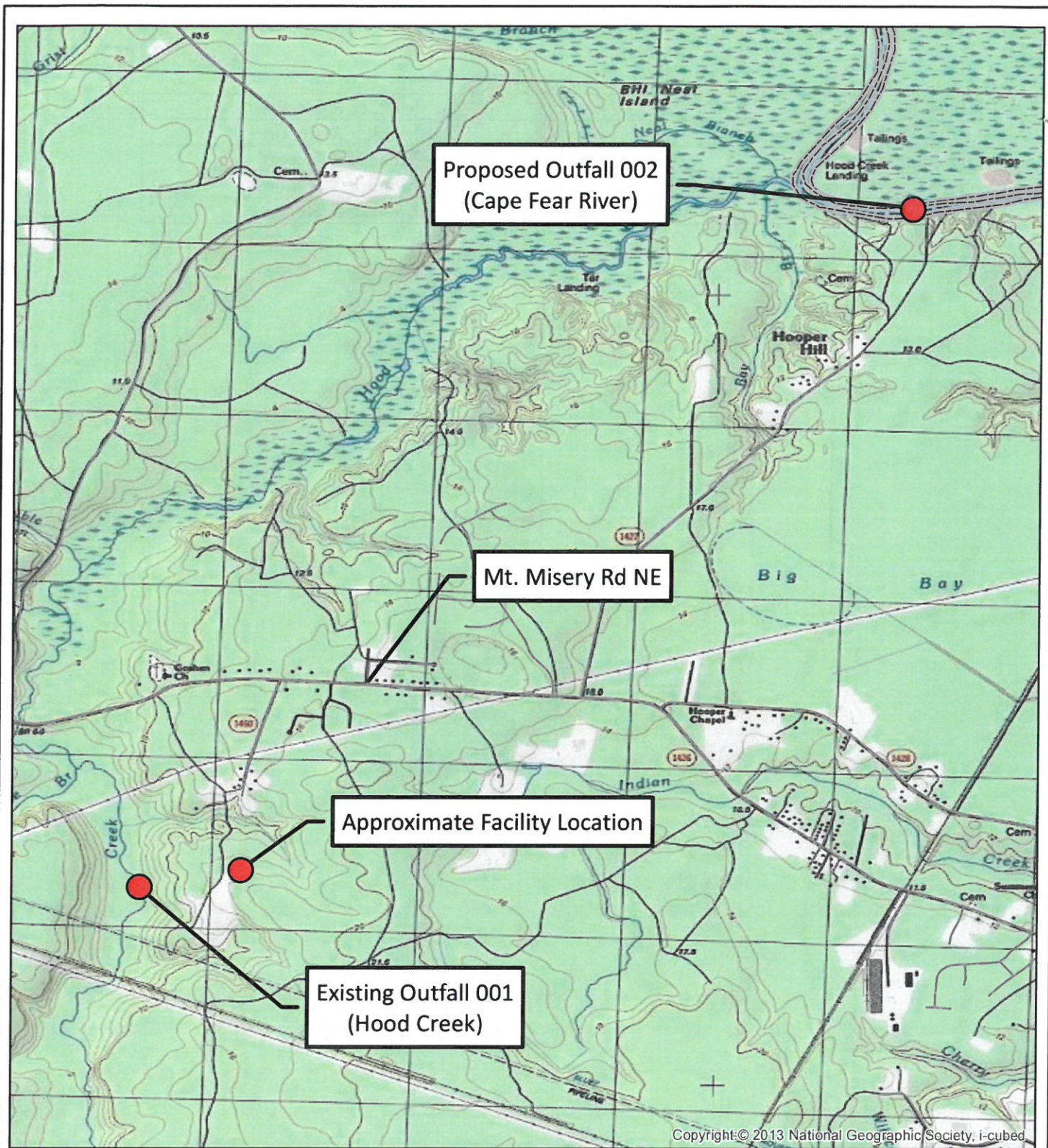
ATTACHMENT I – OUTFALL 002

No later than 2 years after the commencement of discharge from the proposed facility through outfall 002, monitoring for the following parameters shall be performed and reported. All laboratory data sheets will be submitted to the Division. Testing shall be performed at the same time as parameters required by NPDES application Form 2C. All samples shall be grab samples and must be collected from a typical discharge event.

EFFLUENT CHARACTERISTICS	LIMITS	
	Monthly Average	Daily Maximum
Gross Beta (pCi/L)	Monitor & Report	
Atrazine	Monitor & Report	
Total Molybdenum	Monitor & Report	
2,4-Dichlorophenoxyacetic acid (2,4-D)	Monitor & Report	
1,4-dioxane	Monitor & Report	
1,1,2-Trichloro-1,2,2-trifluoroethane	Monitor & Report	
1,2,3-Trichloropropane	Monitor & Report	
1,2,3-Trimethylbenzene	Monitor & Report	
1,2-Dibromo-3-chloropropane (DBCP)	Monitor & Report	
2-Butanone (MEK)	Monitor & Report	
Acetone	Monitor & Report	
Acrylonitrile	Monitor & Report	
Total Chromium	Monitor & Report	
Total Cobalt	Monitor & Report	
Ethyl ether (Diethyl ether)	Monitor & Report	
Ethyl methacrylate	Monitor & Report	
Ethylbenzene	Monitor & Report	
Hexachlorobutadiene	Monitor & Report	
Tetrahydrofuran	Monitor & Report	
trans-1,2-Dichloroethylene	Monitor & Report	
4-Nonylphenol	Monitor & Report	
Bromochloroacetic acid	Monitor & Report	
Bromodichloroacetic acid	Monitor & Report	
Bromodichloromethane	Monitor & Report	
Chlorate	Monitor & Report	
Clofibric acid	Monitor & Report	
Desethylatrazine	Monitor & Report	
Desisopropylatrazine	Monitor & Report	
Diaminochlorotriazine	Monitor & Report	
Dibromoacetic acid	Monitor & Report	
Dibromochloromethane	Monitor & Report	
Metazochlor	Monitor & Report	
Monobromoacetic acid	Monitor & Report	
Monochloroacetic acid	Monitor & Report	
N-Nitrosomorpholine (NMOR)	Monitor & Report	
N-Nitrosopyrrolidine (NPYR)	Monitor & Report	

Total HAAS	Monitor & Report
Total Organic Carbon (TOC)	Monitor & Report
Trichloroacetic acid	Monitor & Report
Tris(1,3-dichloro-2-propyl) phosphate	Monitor & Report
Tris(2-carboxyethyl)phosphine hydrochloride	Monitor & Report

DRAFT



**Brunswick County
Northwest WTP
NPDES Permit NC0057533**

Receiving Stream: 001: Hood Creek	County: Brunswick
002: Cape Fear River	Stream Class: 001: C; Sw
Stream Segment: 001: 18-66	002: C; Sw, PNA
002: 18-(63)	Sub-Basin #: 03-06-17
River Basin: Cape Fear	HUC: 0303000504



SCALE
1:30,000



Facility Location
scale not shown

USGS Quad: Leland
Existing Outfall 001: 34.30222°, -78.11333°
Proposed Outfall 002: 34.33805° -78.07275°